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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/601,103	07/27/2000	REIJI TAMURA	152-531P	5600

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EXAMINER

FERGUSON, LAWRENCE D

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 04/24/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

MF-7

**Office Action Summary**

Application No.

09/601,103

Applicant(s)

TAMURA ET AL

Examiner

Lawrence D Ferguson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 February 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1, 5-8 and 10-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 5-8 and 10-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other:

## DETAILED ACTION

### ***Response to Amendment***

1. This action is in response to the amendment mailed February 06, 2002.  
Claims 2-4 were canceled and claims 10-20 were added rendering claims 1, 5-8 and 10-20 pending.

### ***Claim Rejections – 35 USC § 103(a)***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 5-8 and 10-13 and 18 and 20 are rejected under 35 U.S.C. 103(a) as being obvious over Shinozuka et al. (U.S. 5,298,305) in view of JP 09098789 further in view of Nonoyama et al (U.S. 5,646,924).
4. Shinozuka discloses an optical recording medium in which a phase change is caused in a recording material by the application of a light beam (column 1, lines 7-13) where the recording layer is formed with an atomic percentage and Ge-Sb-Te is conventionally used as recording material (column 1, lines 36-39). The reference discloses the recording material is composed of Ag (column 3, lines 17-19) at an

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amount of 0.5 to 10 atm.% (column 4, line 31). Shinozuka discloses a protective layer (column 4, line 47) over the recording layer, where the recording and protective layers are analogous to recording and protective films. Shinozuka does not explicitly disclose the thickness of the protective film or the recording film. It would have been obvious to one of ordinary skill in the art to optimize the components because discovering the optimum or workable range involves only routine skill in the art. Although Shinozuka does not explicitly disclose the precise at %/nm, it would have been obvious to one of ordinary skill in the art to optimize the components since discovering the optimum or workable ranges involves only routine skill in the art. Shinozuka does not disclose nitrogen content on both sides of the recording and protective layers, containing ZnS-SiO<sub>2</sub>.

JP '789 teaches a protective layer on one side of the recording layer and making nitrogen content in the vicinity of the boundary surface between the protective layer and the recording layer smaller than the average nitrogen content of the recording layer (abstract, lines 2-8).

JP '789 teaches a recording medium containing ZnS-SiO<sub>2</sub> along with GeSbTe alloy (abstract, lines 9-14) which are known dielectric materials. Additionally, Nonoyama teaches an information recording medium with a protective layer comprising ZnS-SiO<sub>2</sub> (column 2, lines 9-11).

All of the references are analogous art because they are from the same field of recording media. It would have been obvious to one of ordinary skill in art to include the nitrogen content on both sides of the recording and protective layers containing ZnS-

SiO<sub>2</sub> in the recording medium of Shinozuka because JP '789 teaches that these particular protective layers are known in the art and are useful for an increase in weatherability of the recording medium. It would have additionally been obvious to one of ordinary skill in the art to include ZnS-SiO<sub>2</sub> in the recording medium of Shinozuka because Nonoyama teaches this material is used in recording mediums to help reduce environmental influences from affecting the recording layer.

***Claim Rejections – 35 USC § 103(a)***

5. Claims 14-17 and 19 are rejected under 35 U.S.C. 103(a) as being obvious over Shinozuka et al. (U.S. 5,298,305) in view of JP 09098789 in view of Nonoyama et al (U.S. 5,646,924) further in view of Miyauchi et al (U.S. 5,878,021).

6. Shinozuka, JP '789 and Nonoyama are relied upon for claims 1, 5-8 and 10-13 and 18 and 20. None of the references discloses two protective films or two reflective layers. Miyauchi teaches an information recording medium comprising a first and second protective layer and a first and second reflective layer (column 9, lines 37-42) where one of the reflective layers is a AlTi alloy (column 5, line 59). Miyauchi does not explicitly disclose the thickness of the second protective film. It would have been obvious to one of ordinary skill in the art to optimize the components because discovering the optimum or workable range involves only routine skill in the art.

All of the references are analogous art because they are all from the same field of recording media. It would have been obvious to one of ordinary skill in art to include a

two reflective layers and an additional protective layer in the recording medium of Shinozuka because Miyauchi teaches these layers are necessary to provide additional protection for the recording layer and helps reduce heat from entering and altering the intermediate components of the recording medium.

### ***Response to Arguments***

7. Applicant's arguments of rejection under 35 USC 103(a) as unpatentable over Shinozuka et al. (U.S. 5,298,305) in view of JP 09098789 are considered but are unpersuasive. Applicant argues Shinozuka '305 and JP '789 have a recording layer that is sandwiched directly in contact with the protective layers where the present invention has a recording film that is in contact with only one of the protective films and the bottom protective film is shielded from the recording film by an interface film. This argument lacks merit because Applicant does not specifically claim that the second protective layer is not in contact with the recording layer. Applicant additionally does not claim an interface film. Applicant argues Shinozuka '305 discloses nitride alloys in the protective layers that are disadvantageous to the claimed invention. Examiner disagrees because Applicant claims the protective layer contains nitrogen content, which Shinozuka clearly teaches and furthermore, newly cited Nonoyama et al. teaches an information recording medium having a protective layer comprising ZnS-SiO<sub>2</sub>.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lawrence Ferguson whose telephone number is (703) 305-9978. The examiner can normally be reached on Monday through Friday 8:30 AM – 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cynthia Kelly can be reached on (703) 308-0449. Please allow the examiner twenty-four hours to return your call.

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The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for

After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)

308-2351.



Lawrence D. Ferguson  
Examiner  
Art Unit 1774

CYNTHIA H. KELLY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 1700

